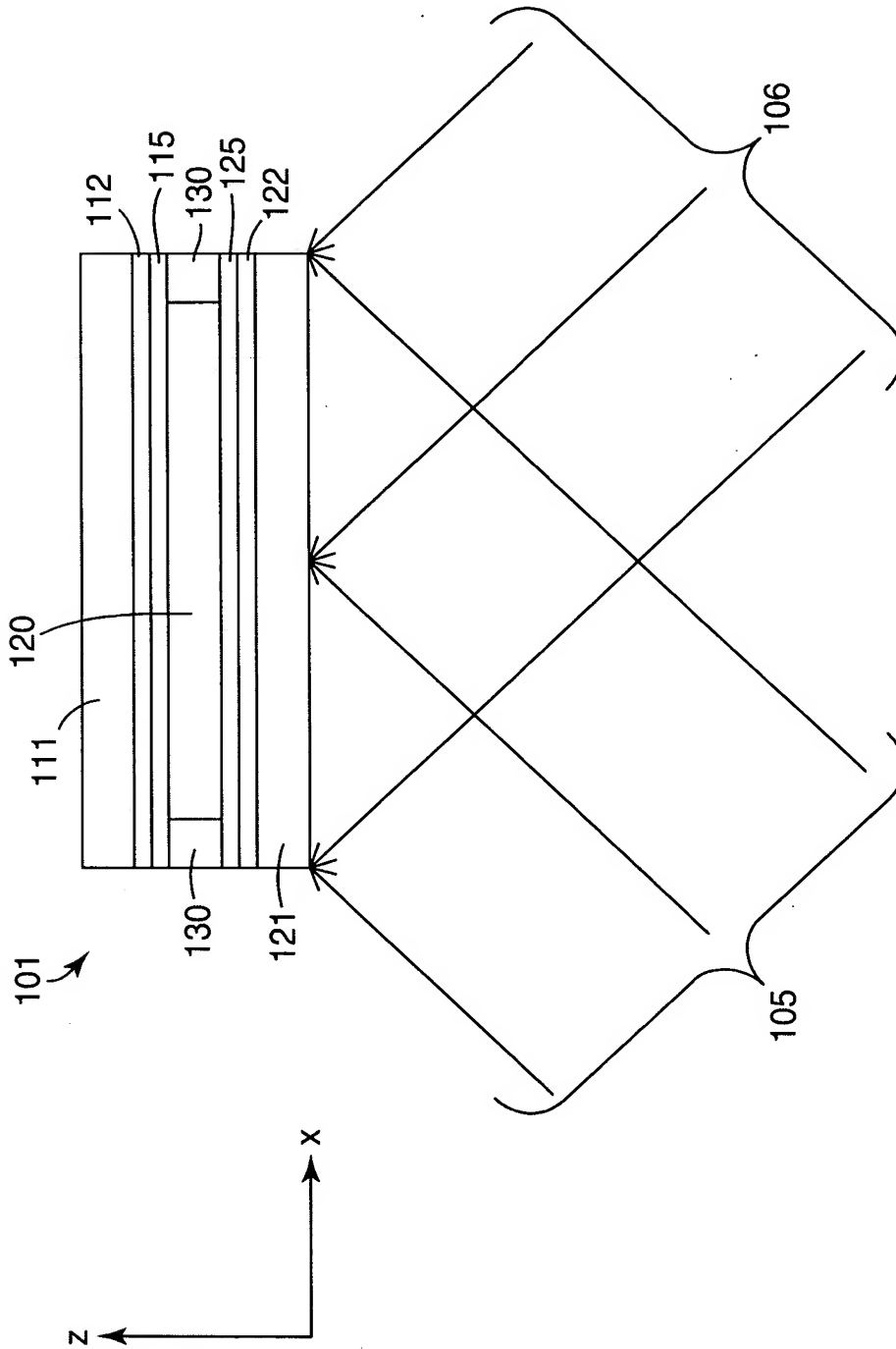




First Named Inventor: Crawford, Gregory P.
Case No.: 59067US002
Application No.: 10/748562
Title: Alignment of Liquid Crystals

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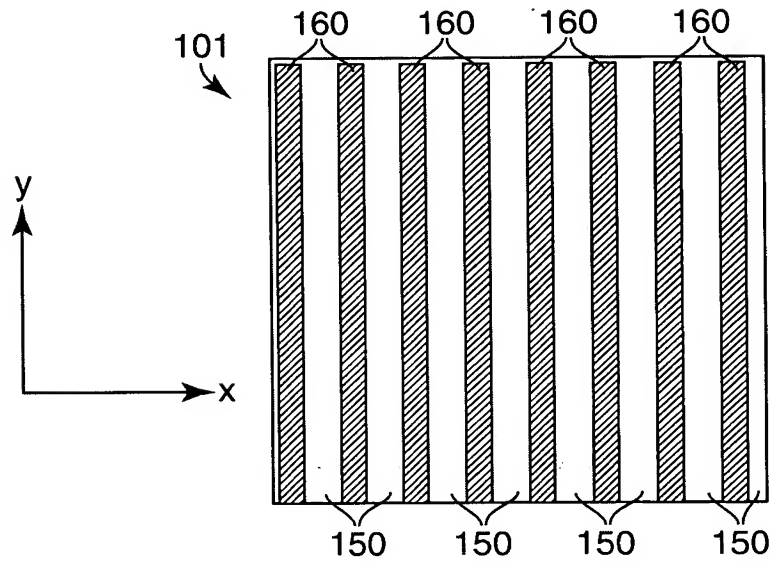


FIG. 1B

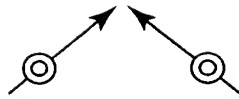


FIG. 2A

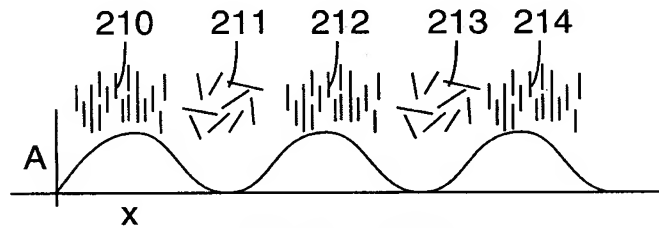


FIG. 2B

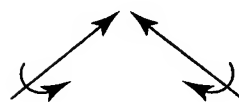


FIG. 3A



FIG. 3B

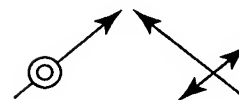


FIG. 4A

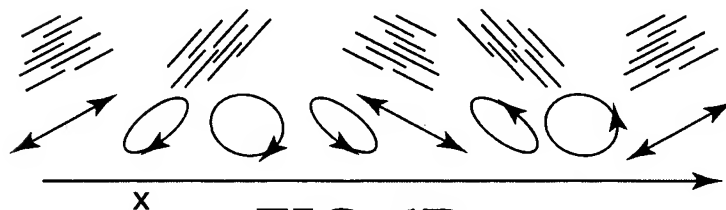


FIG. 4B

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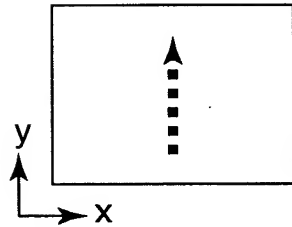


FIG. 5A

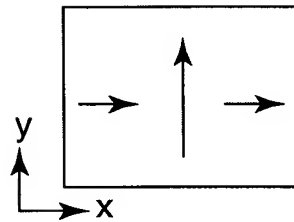


FIG. 5B

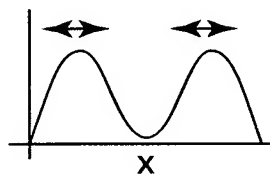


FIG. 5C

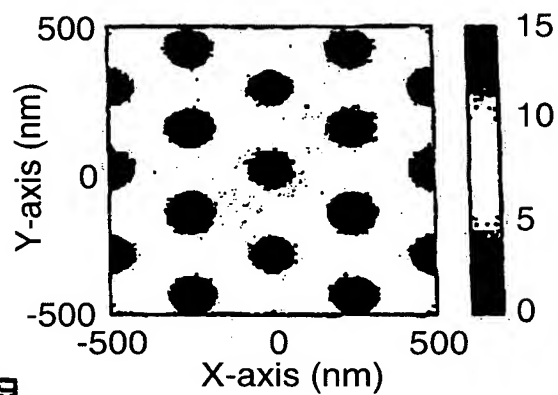


FIG. 6A

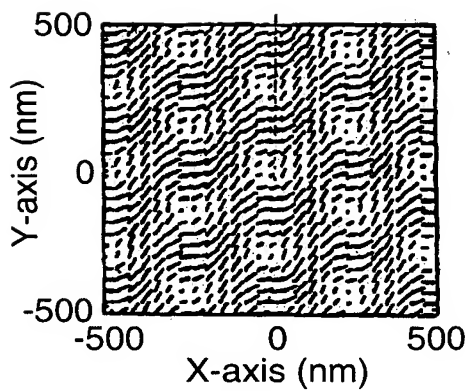


FIG. 6B

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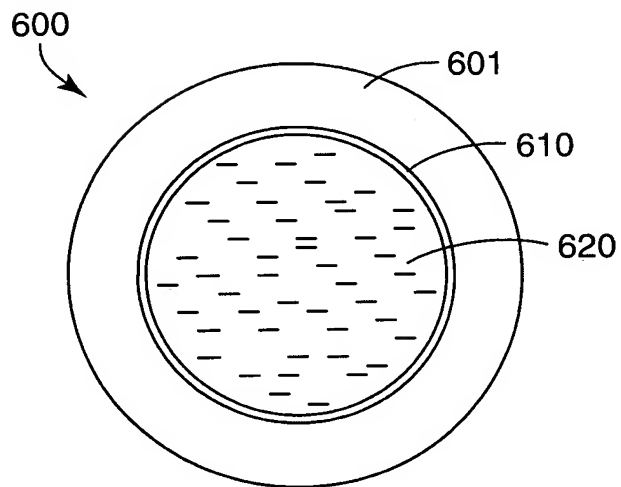


FIG. 7A

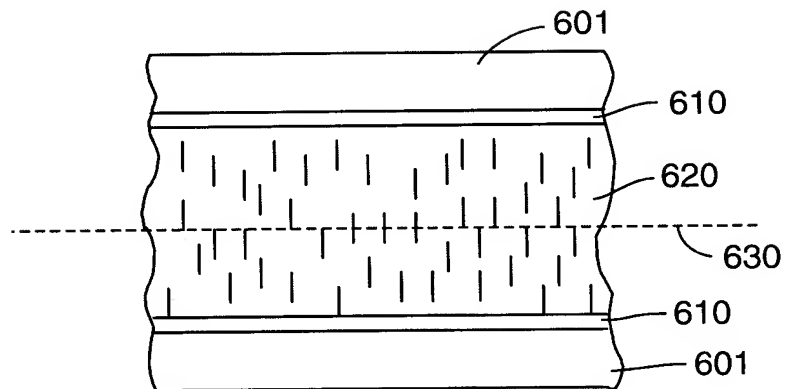


FIG. 7B

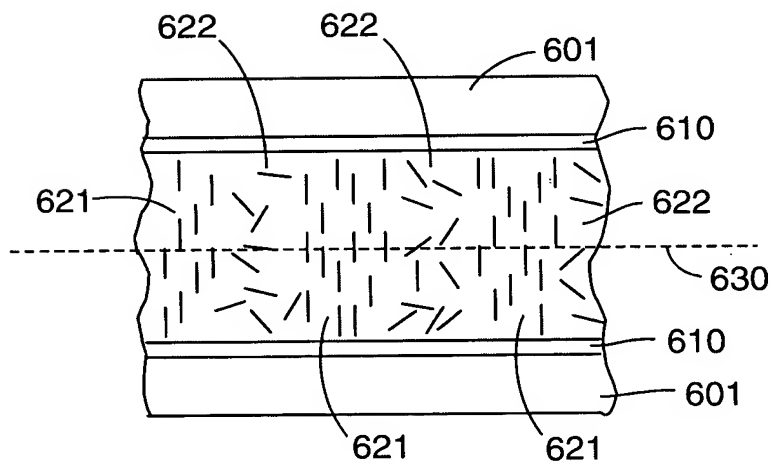


FIG. 7C

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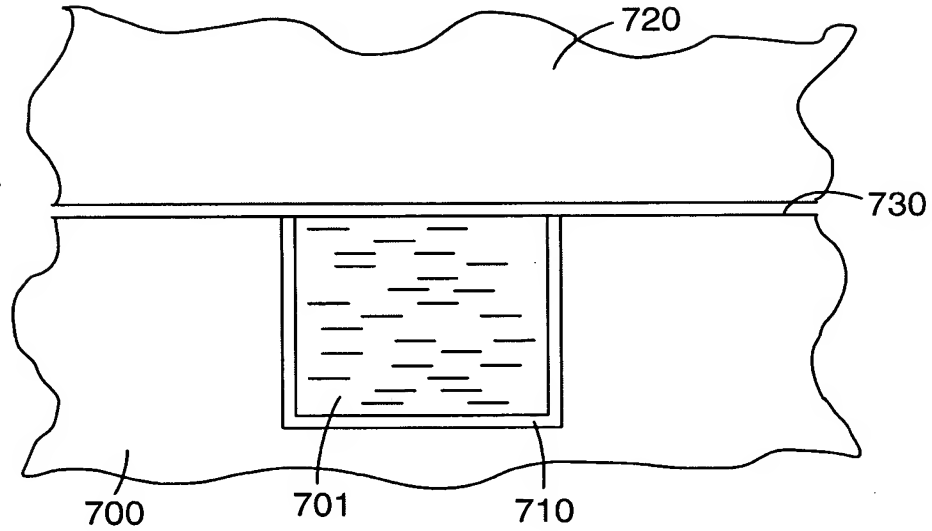


FIG. 8

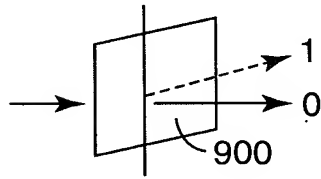


FIG. 9A

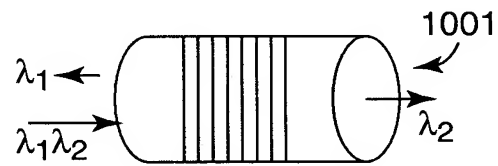


FIG. 10A

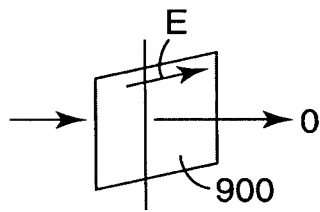


FIG. 9B

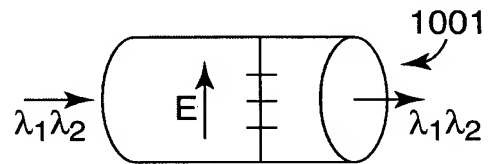


FIG. 10B

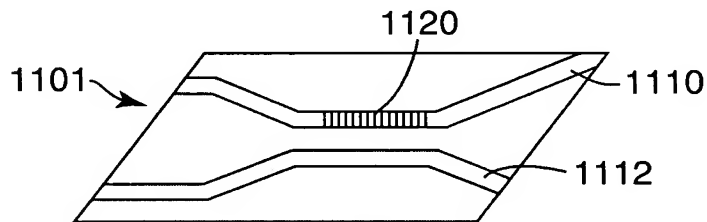


FIG. 11

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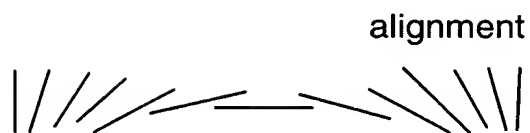


FIG. 12A

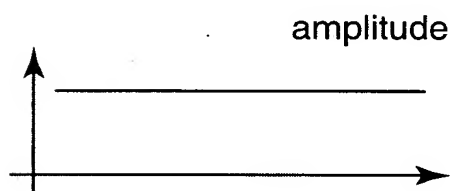


FIG. 12B

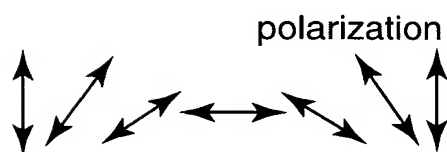


FIG. 12C

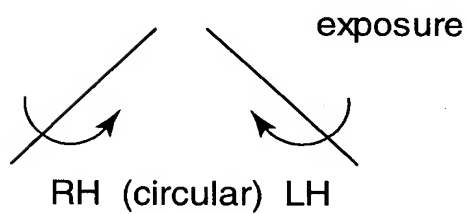


FIG. 12D

Substrate 1

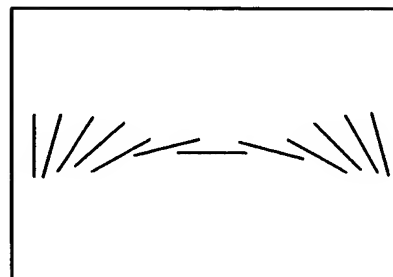


FIG. 12E

Substrate 2

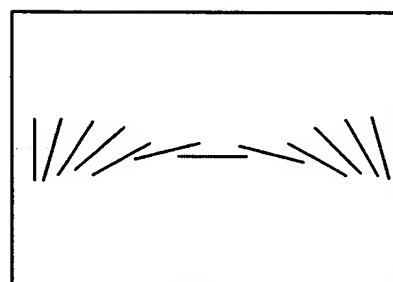


FIG. 12F

Cross-section of cell

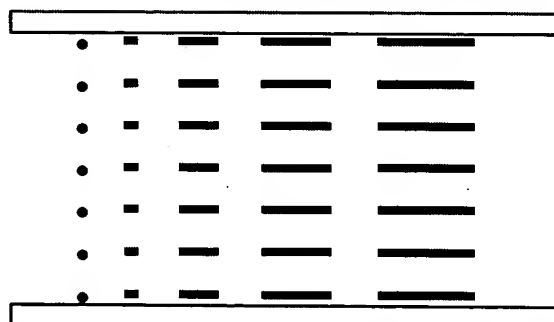


FIG. 12G

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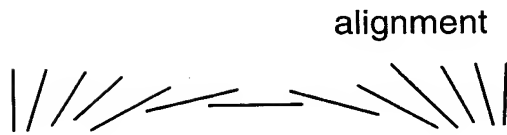


FIG. 13A.

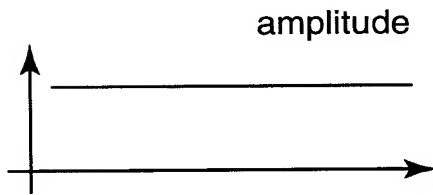


FIG. 13B

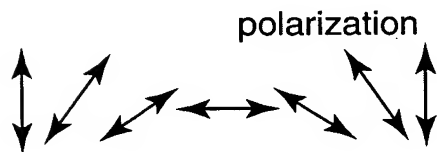


FIG. 13C

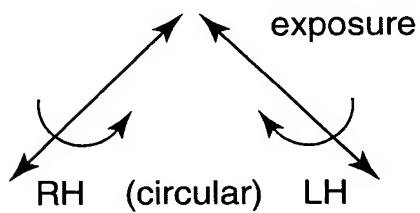


FIG. 13D

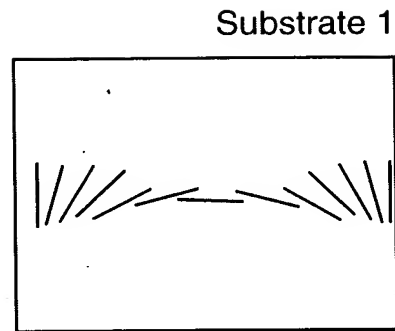


FIG. 13E

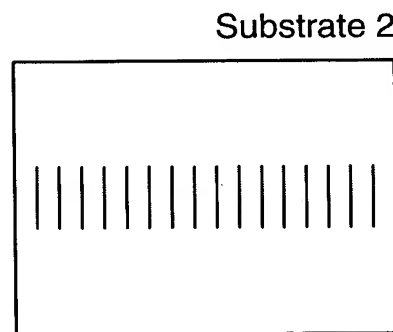


FIG. 13F

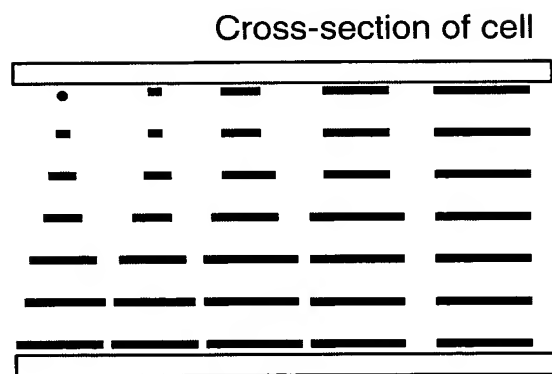


FIG. 13G

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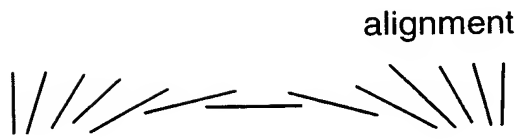


FIG. 14A

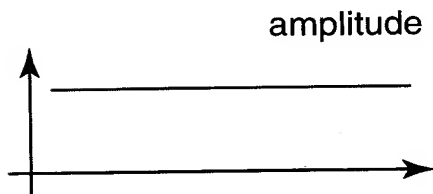


FIG. 14B

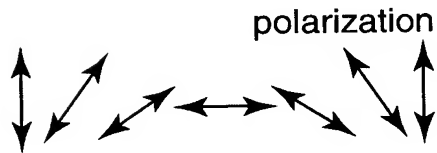


FIG. 14C

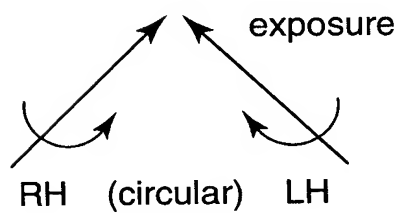


FIG. 14D

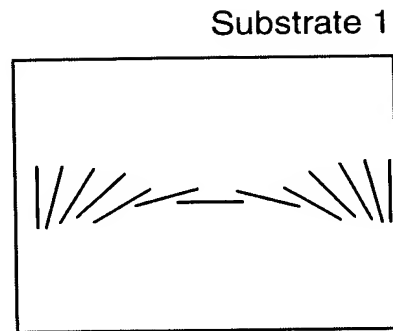


FIG. 14E

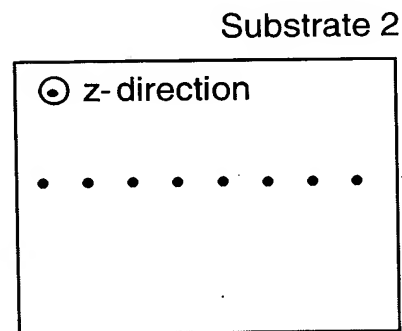


FIG. 14F

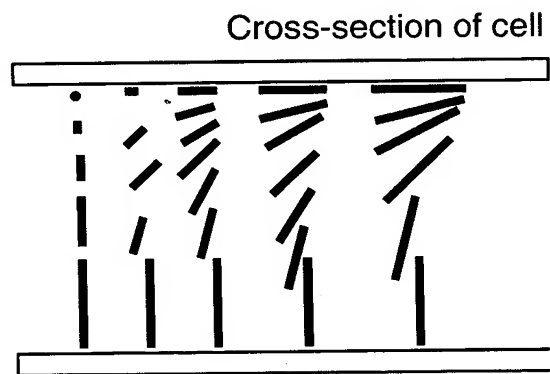
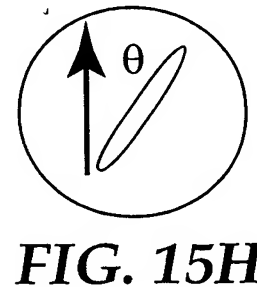
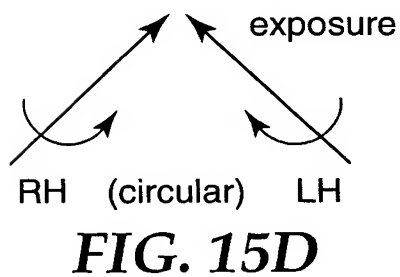
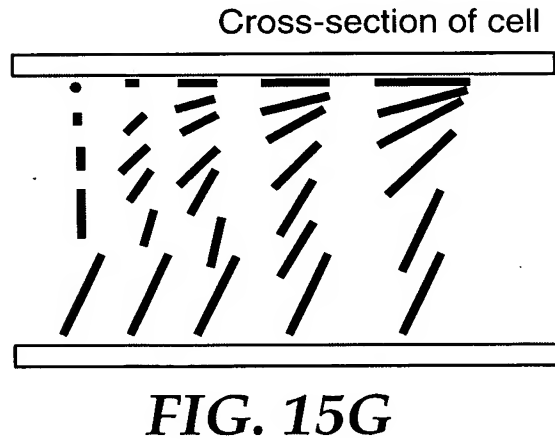
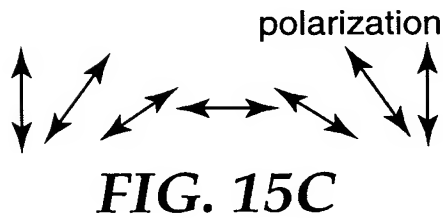
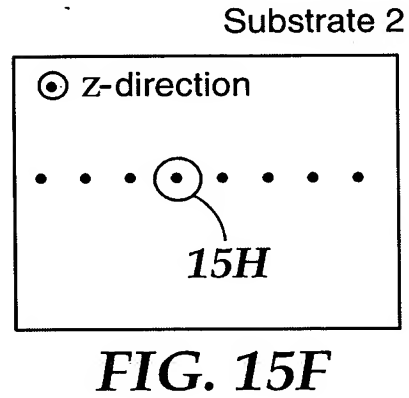
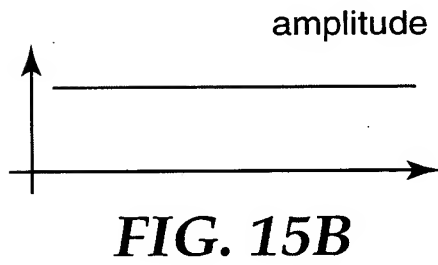
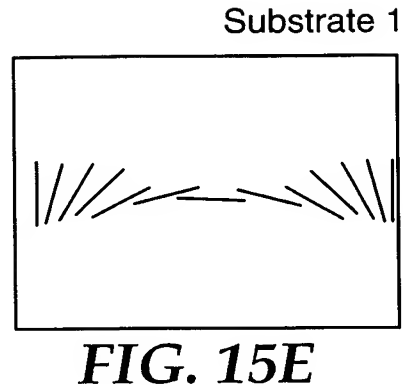


FIG. 14G

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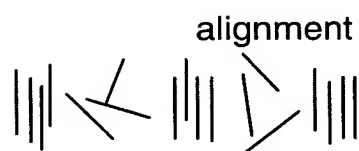


FIG. 16A

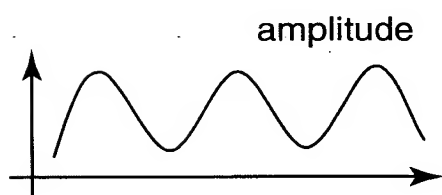


FIG. 16B

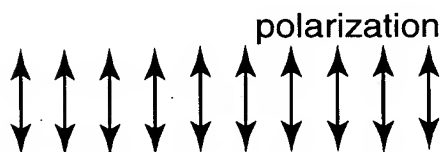


FIG. 16C

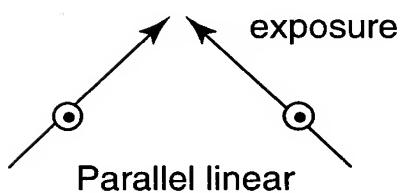


FIG. 16D

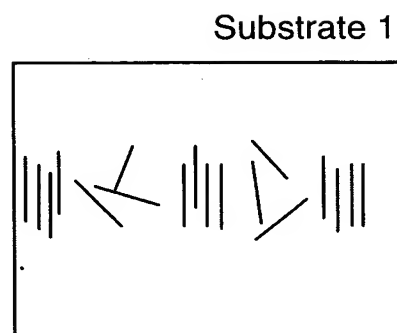


FIG. 16E

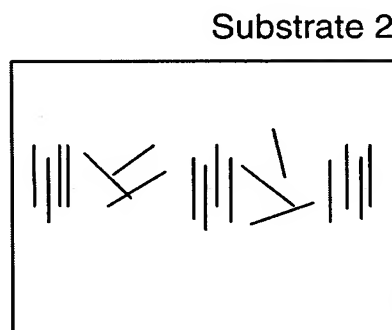


FIG. 16F

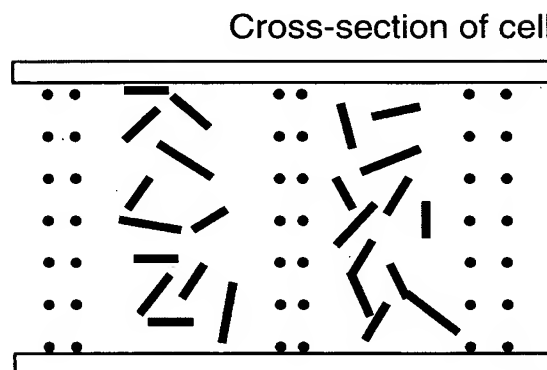


FIG. 16G

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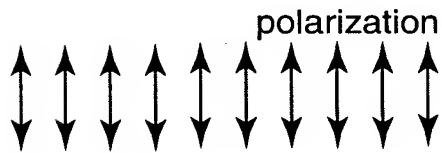
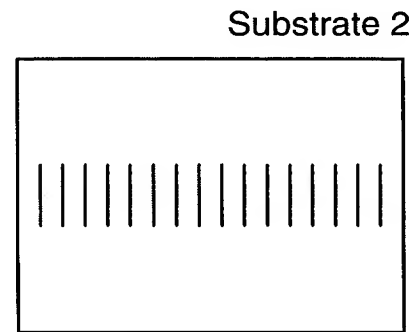
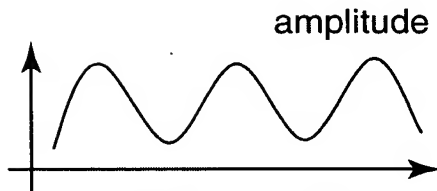
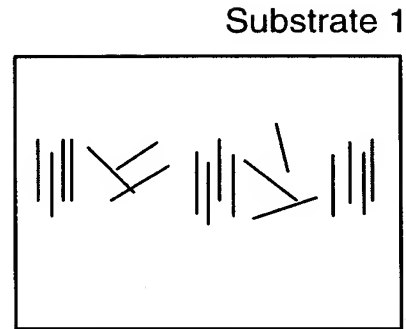
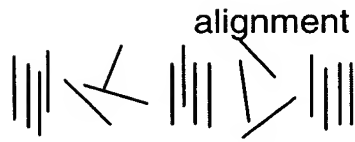


FIG. 17F

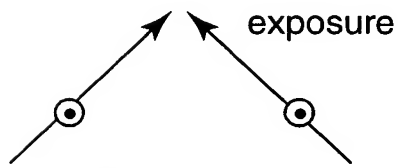
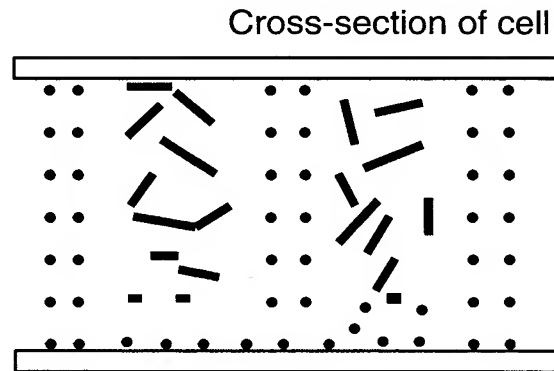


FIG. 17D



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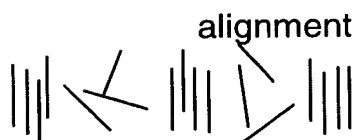


FIG. 18A

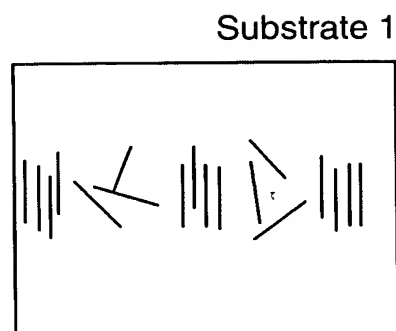


FIG. 18E

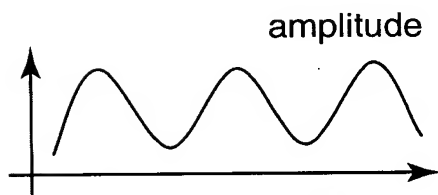


FIG. 18B

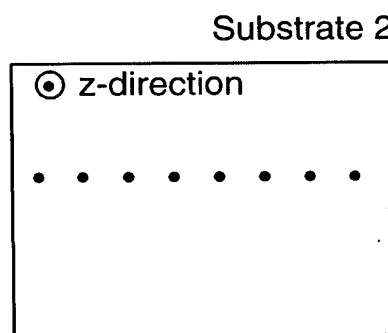


FIG. 18F

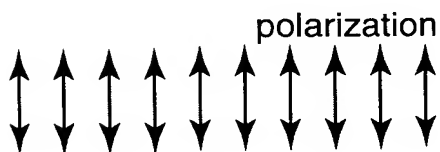


FIG. 18C

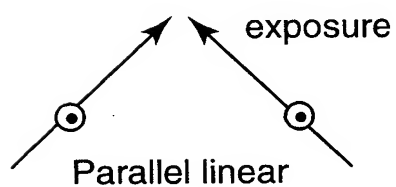


FIG. 18D

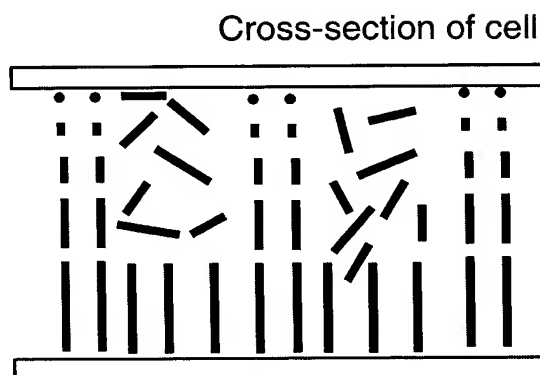


FIG. 18G

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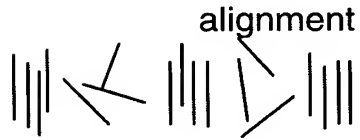


FIG. 19A

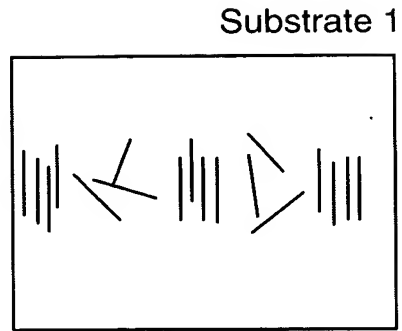


FIG. 19E

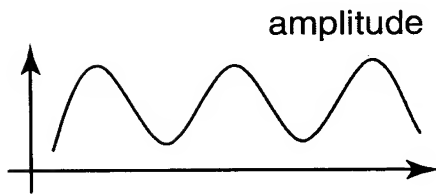


FIG. 19B

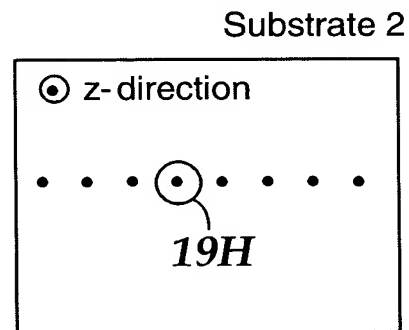


FIG. 19F

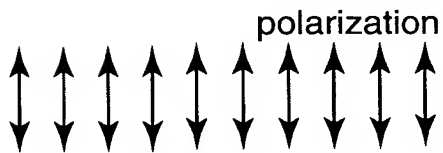


FIG. 19C

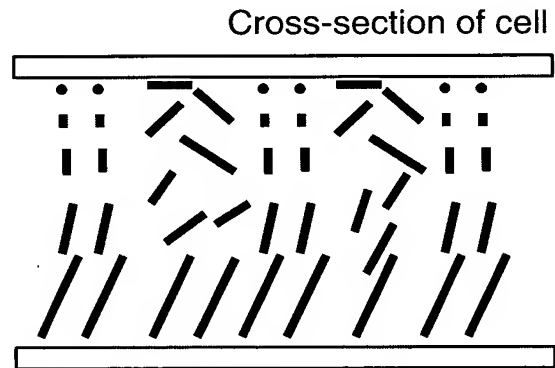


FIG. 19G

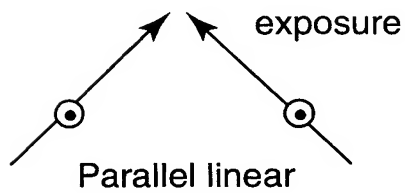


FIG. 19D

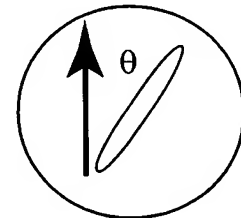


FIG. 19H

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FIG. 20A

Substrate 1

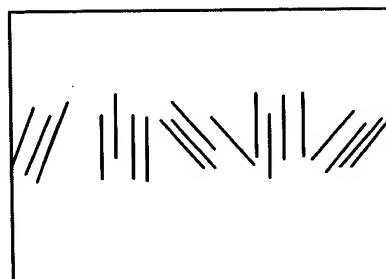


FIG. 20E

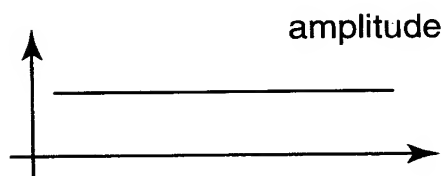


FIG. 20B

Substrate 2

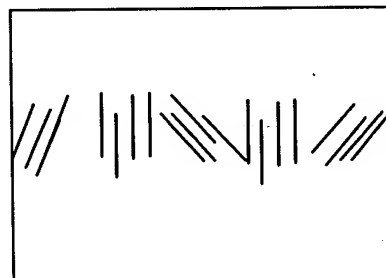


FIG. 20F

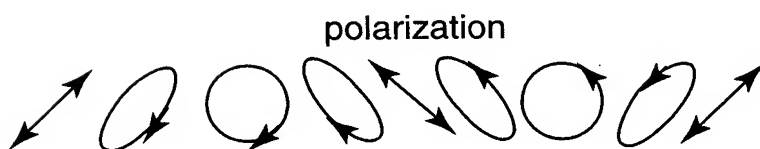


FIG. 20C

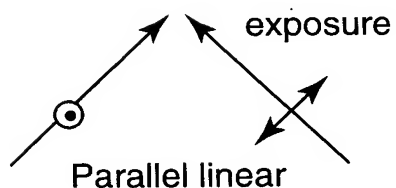


FIG. 20D

Cross-section of cell

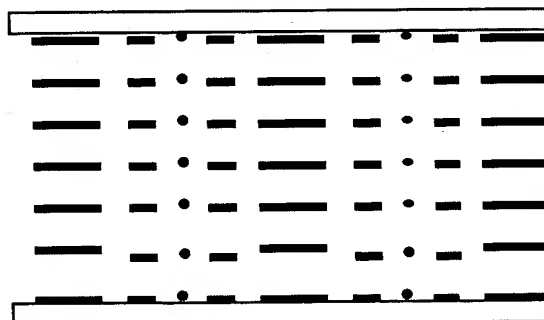


FIG. 20G

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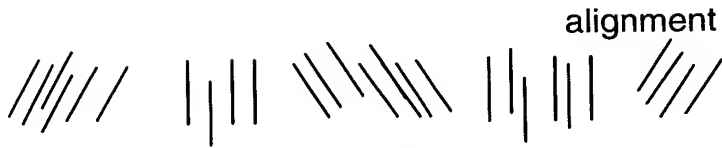


FIG. 21A

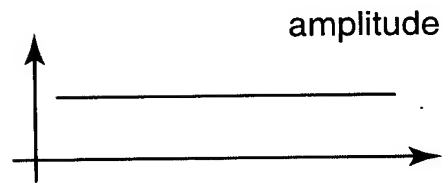


FIG. 21B

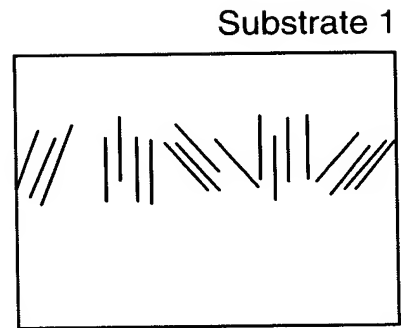


FIG. 21E

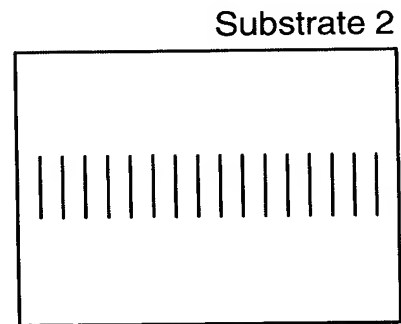


FIG. 21F

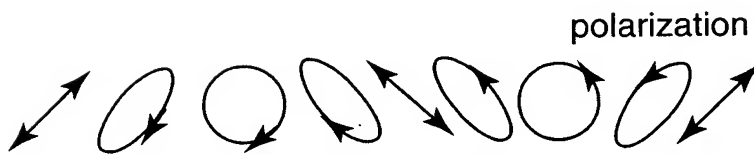


FIG. 21C

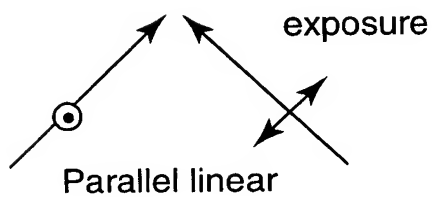


FIG. 21D

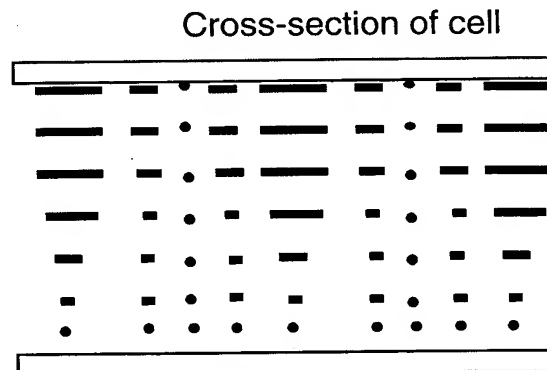
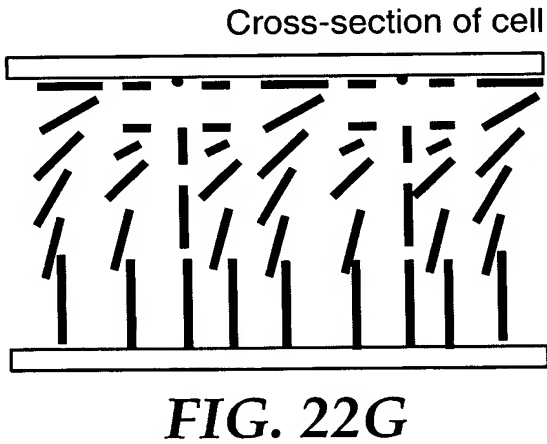
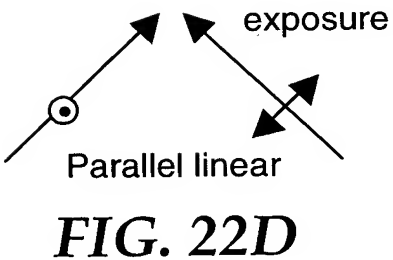
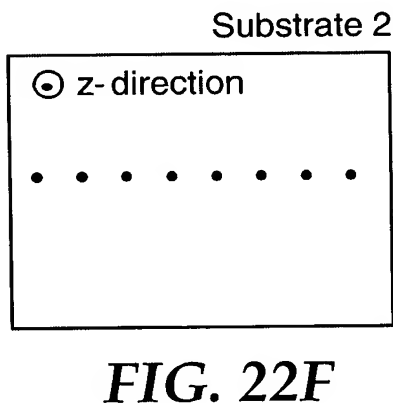
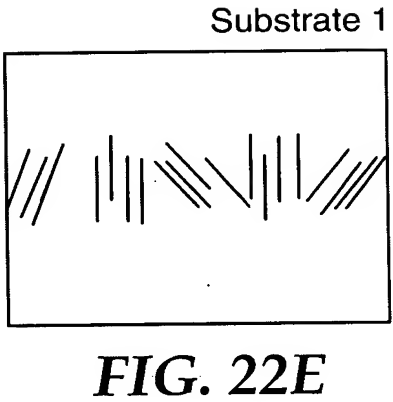
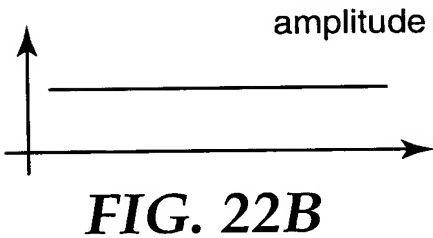


FIG. 21G



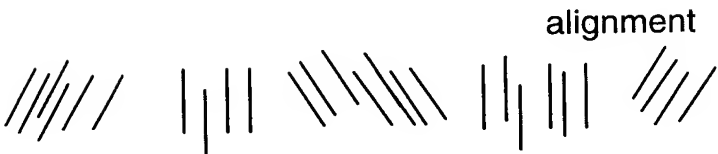


FIG. 23A

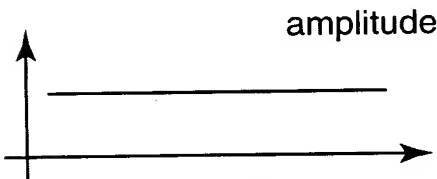


FIG. 23B

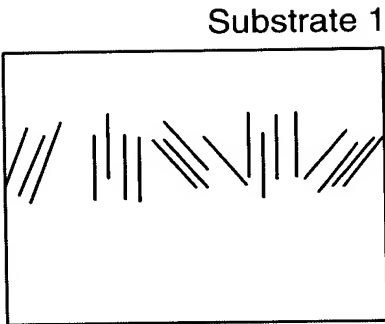


FIG. 23E

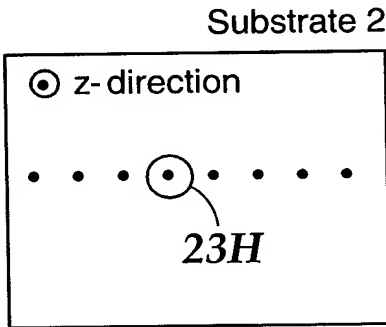


FIG. 23F

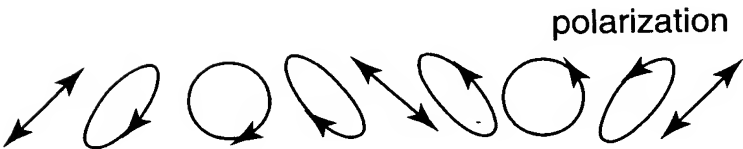


FIG. 23C

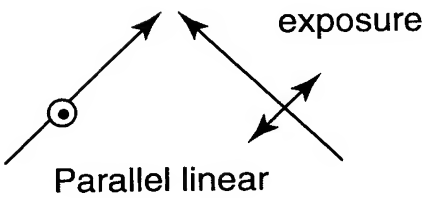


FIG. 23D

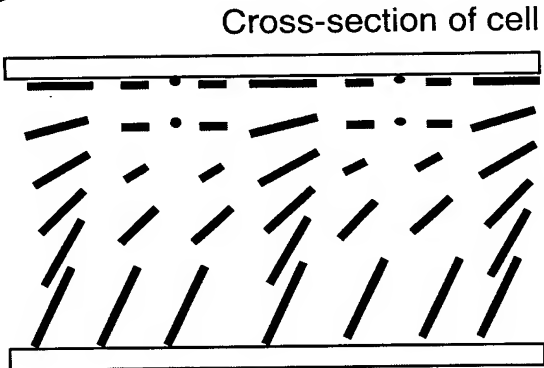


FIG. 23G

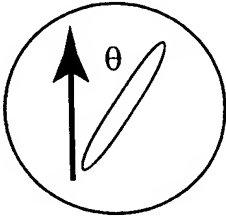


FIG. 23H

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FIG. 24A

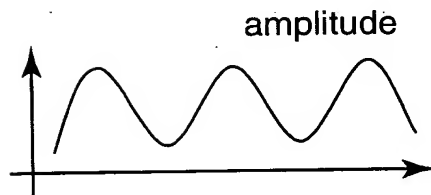


FIG. 24B

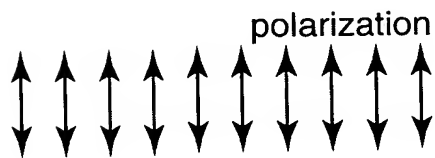


FIG. 24C

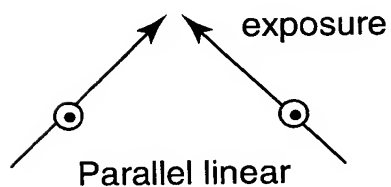


FIG. 24D

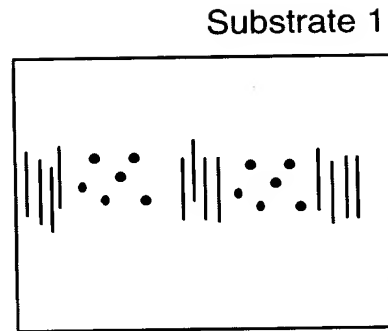


FIG. 24E

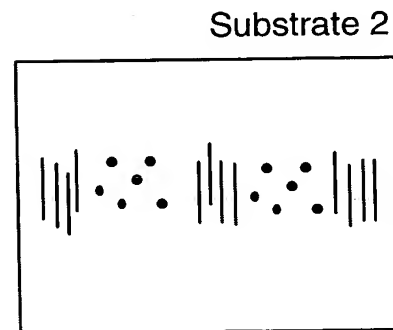


FIG. 24F

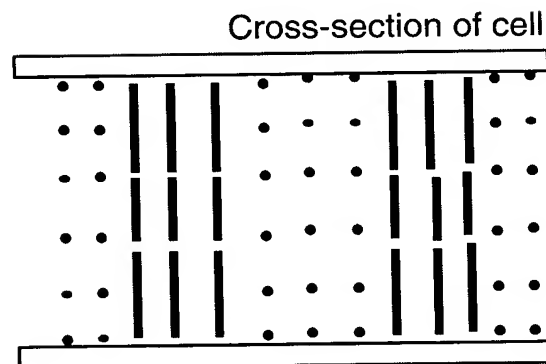
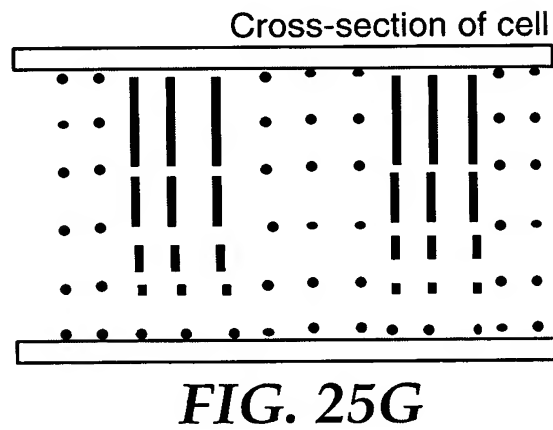
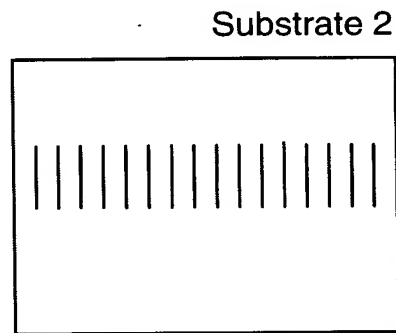
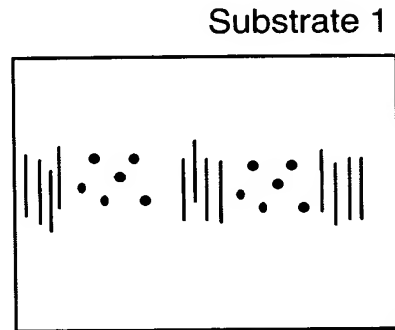
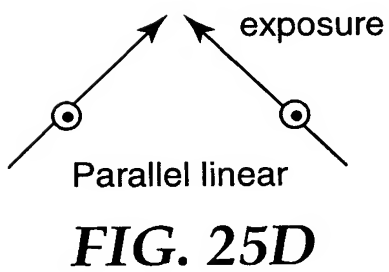
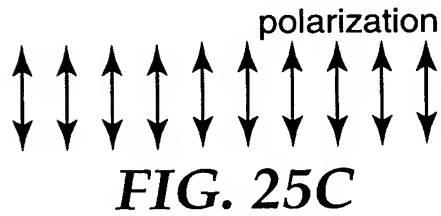
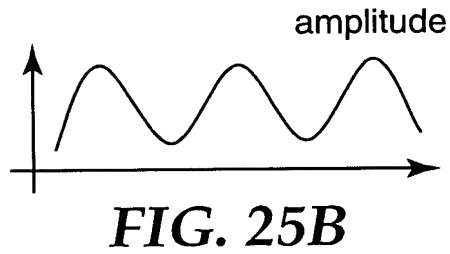
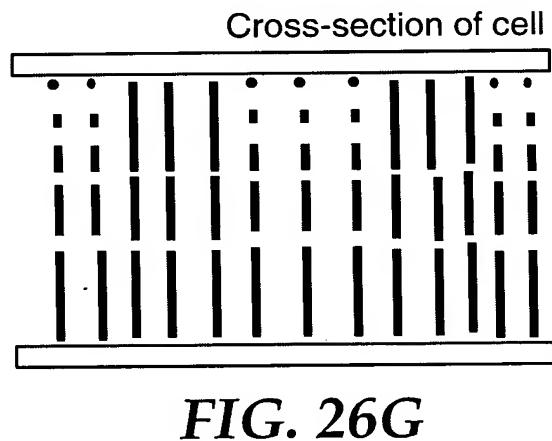
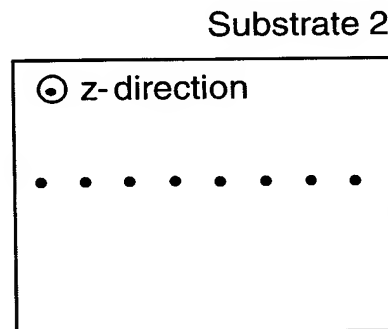
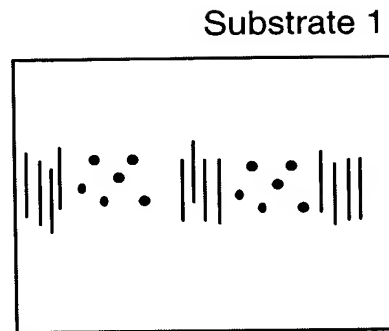
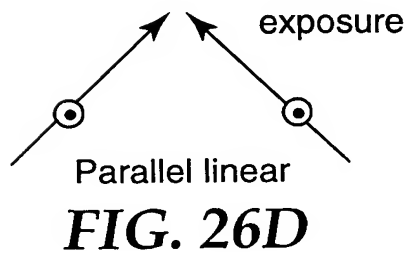
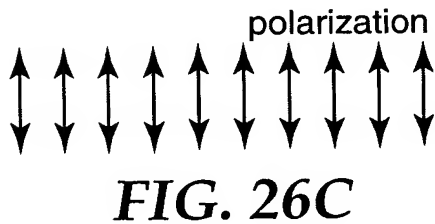
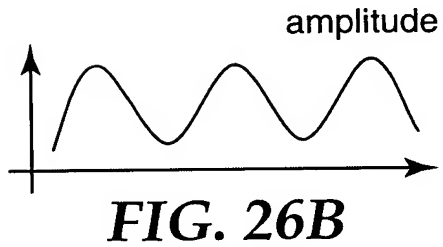


FIG. 24G

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FIG. 27A

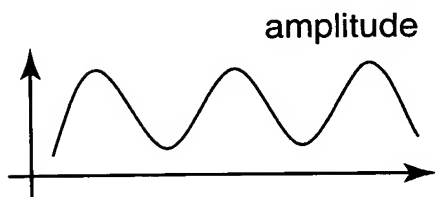


FIG. 27B

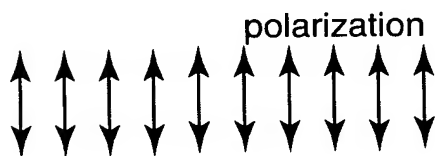


FIG. 27C

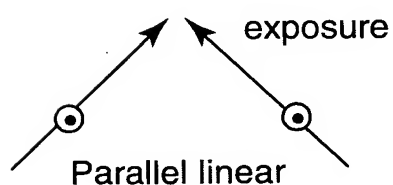


FIG. 27D

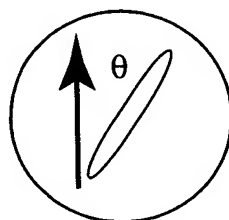


FIG. 27H

Substrate 1

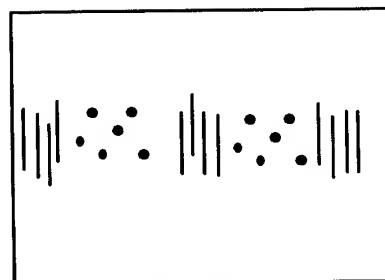


FIG. 27E

Substrate 2

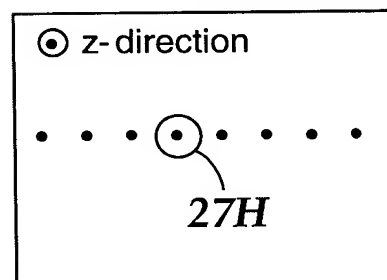


FIG. 27F

Cross-section of cell

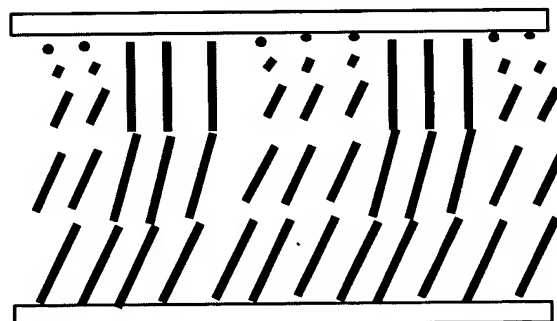
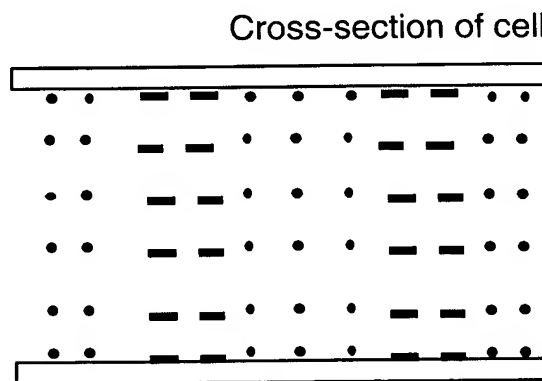
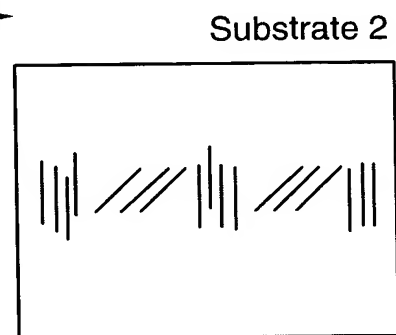
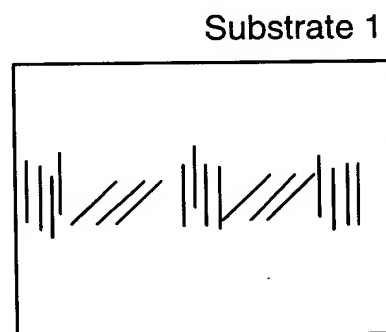
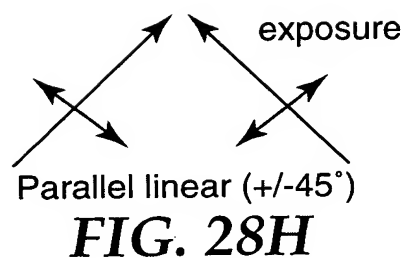
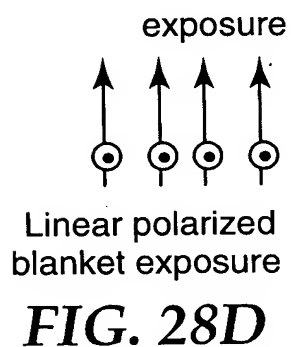
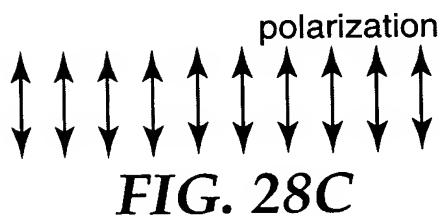
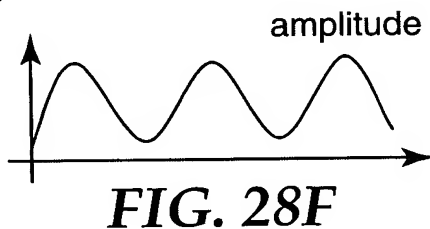
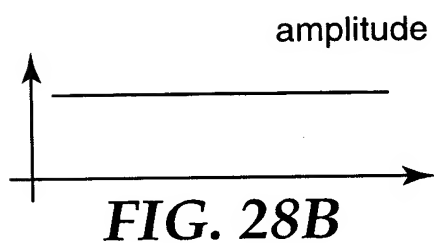
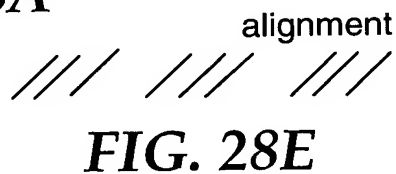
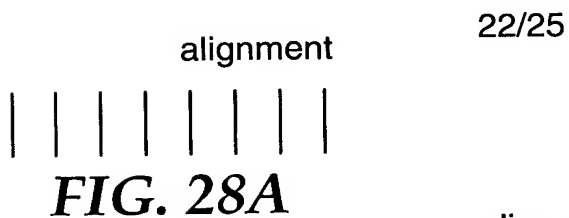


FIG. 27G



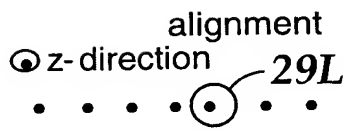


FIG. 29A

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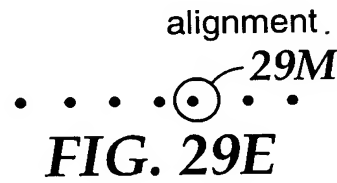


FIG. 29E

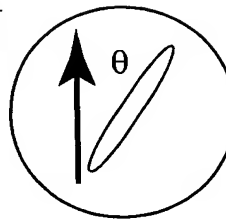


FIG. 29L

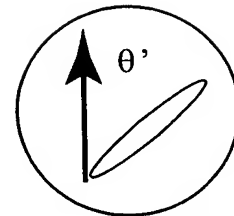


FIG. 29M

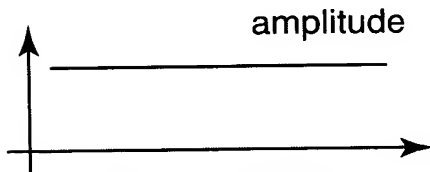


FIG. 29B

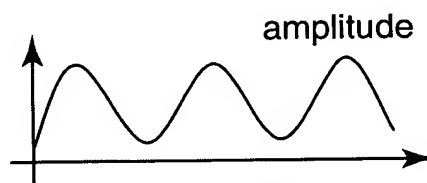


FIG. 29F

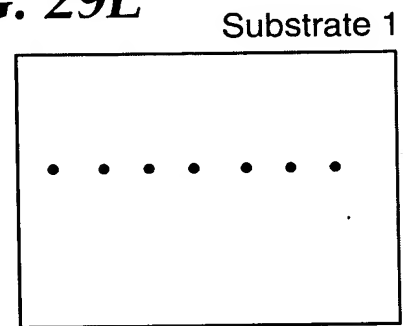


FIG. 29I

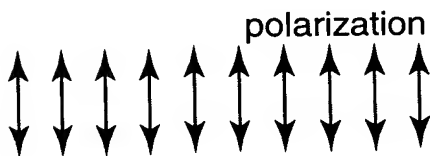


FIG. 29C

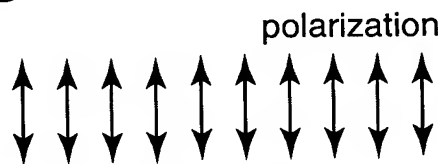


FIG. 29G

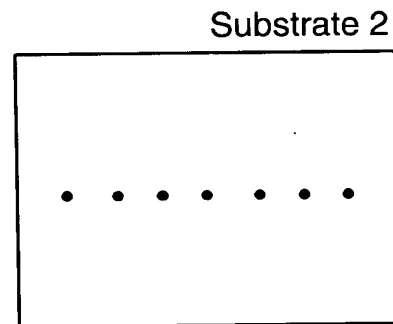


FIG. 29J

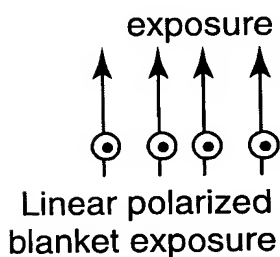


FIG. 29D

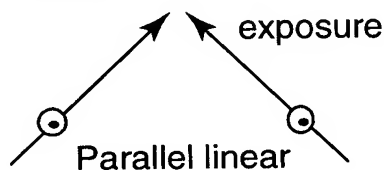


FIG. 29H

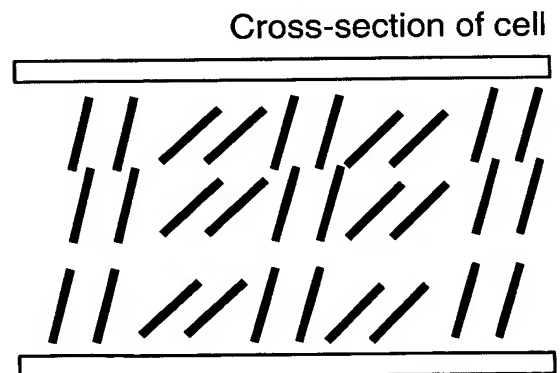
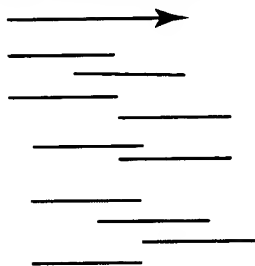


FIG. 29K

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Rubbing direction



alignment

FIG. 30A

alignment



FIG. 30B

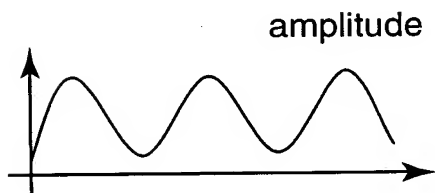


FIG. 30C

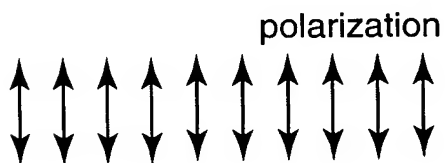
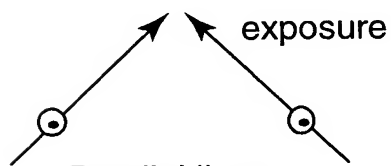


FIG. 30D



Parallel linear

FIG. 30E

Substrate 1

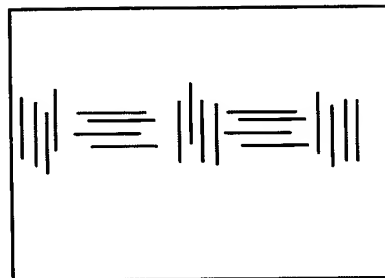


FIG. 30F

Substrate 2

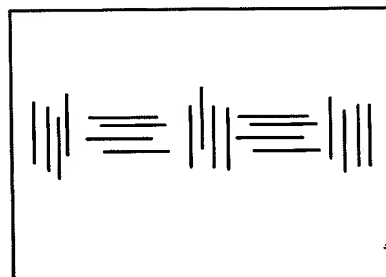


FIG. 30G

Cross-section of cell

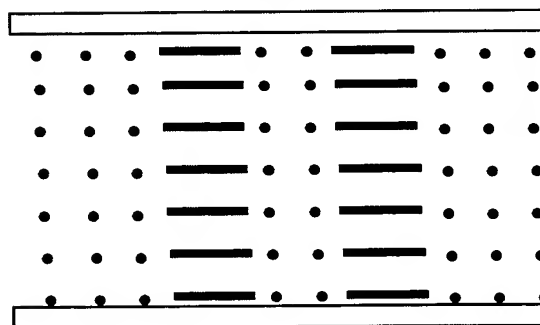


FIG. 30H

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FIG. 31A

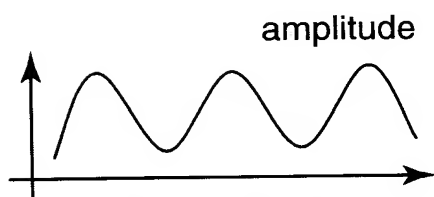


FIG. 31B

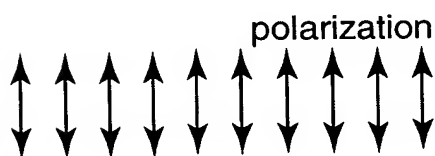


FIG. 31C

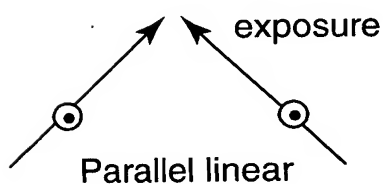


FIG. 31D

Substrate 1

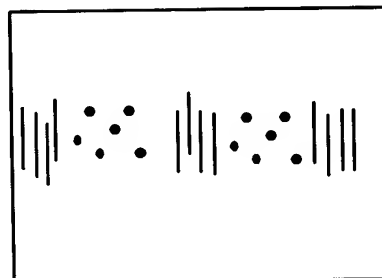


FIG. 31E

Substrate 2

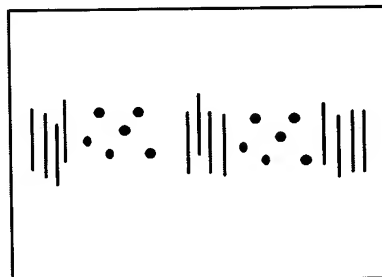


FIG. 31F

Cross-section of cell

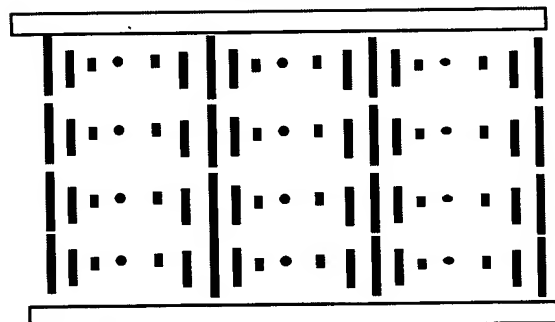


FIG. 31G